

Project Report
Alaska Public Broadcasting, Inc.
Project Number 0117-DC-2004-15
April 1, 2008 – June 30, 2008

Alaska Rural Communications Service & Satellite Interconnection Revitalization

Project Summary: the ARCS revitalization project continues to make measurable progress. The project objective is the restoration of television broadcast programming to bush and rural communities by either repairing or replacing non operational equipment. This includes transmitters, antennas, satellite dishes, receiver/decoders, or towers.

Restoration of service: reliable ARCS service has been restored to more than 100 bush and rural communities where it had been completely off or seriously degraded.

Acquisition and refurbishment of equipment: refurbishing original transmitters saves approximately \$5000 per unit compared to purchase of new systems. We continue to cycle rebuilt units to the villages and bring the failed units back from those communities and send them off to the factory for rebuilding. We have rights to use some new receivers to decrease our response time when existing units fail in the villages.

Provision of timely customer support: with a system that includes more than 200 sites, technical staff is kept busy each day with myriad general service and trouble calls involving unique factors and circumstances to analyze and address. The range of work can run from a simple reset to a complex set of problems which have resulted in the complete failure of a village's local service.

Establishment of community partnerships: the majority of the service restoration work is attained through partnership, technical staff working with dedicated community volunteers. Some sites and projects require staff travel in order to deal with the extraordinary circumstances.

Phases two and three are complete: modern technology based systems have been designed and implemented allowing for consolidation of a delivery system and central point of control for multiple content streams. A new method of controlling the ARCS program schedule is fully operational, allowing for remote operation. Equipment purchase and installation of the new State of Alaska satellite uplink system became operational on January 25, 2007.

The overall project is on schedule and within budget. We have not encountered any serious unanticipated problems or set backs requiring significant changes to the work scope. Restoration or upgrading of service presents a different challenge in each community. In partnership with our community liaisons, we continue to identify and solve these problems.

Activity detail: April 1, 2008 – June 30, 2008

- ARCS Technical Support handled 188 calls for assistance from 51 different bush and rural communities serviced by ARCS.
- Atka's refurbished transmitter continues to work well, but the modulator power supply failed taking them off the air. A replacement modulator was sent out to

the community volunteer who was able to successfully install it and restore service to the remote Aleutian community.

- Communities to whom refurbished transmitters were sent include, Kwigillingok, Elfin Cove, Holy Cross, Gambell, Chitina and Crooked Creek.
- At the community of Elfin Cove a new satellite receive antenna was constructed cooperatively between APBI and the Sitka public radio station, KCAW. The new dish is now serving the ARCS television needs and delivering audio for the radio station's repeater in Elfin.
- Service to Chitina was restored when the local volunteer drove in to Anchorage and delivered a failed transmitter and swapped it for a refurb. She later called from the village site and I talked her through the final install.
- Two communities in the vicinity of Kodiak, Bells Flats and Women's Bay, had suffering TV service for months. New modulators were sent out to the public radio engineer at KMXT in Kodiak, who helps keep the transmitters in working order. He installed the units and service was restored to normal.
- Other communities that received our assistance in restoring their ARCS service with replacement satellite receivers, modulators and power line conditioners included Dot Lake, Tok, New Stuyahok, Koyuk, Saint George, Valdez, Eagle Village, Pilot Point, Saint Paul and Port Lions.
- Local volunteers in False Pass continue to explore options for restoring service after their satellite dish that was blown off its mount. They are now looking at using a much heavier-duty dish that had been abandoned a few years ago as the adjacent shelter had been destroyed by fire. Now they report a conex shelter, completely wired and ready to power up, may be available to relocate at the old ARCS site. Next steps include proofing the old dish and arranging for local connection to the AC power grid.
- Many calls and emails have come through the ARCS Technical office regarding the conversion of analog to digital television. We are assuring our viewers that, as a low power television system, ARCS is not required to convert to digital, and our viewers will not need to purchase any new equipment at this time. We are at the same time spreading the message about the federal coupon program and urging our viewers to take advantage of the program before it expires in March of 2009. This way, when ARCS eventually does convert to digital, along with the several-thousand low power stations in the U.S., our viewers will be prepared. We are using informational slides within our broadcast, as well as our website, to get the word out.
- One of the most important roles ARCS plays in the villages is its emergency information distribution role. ARCS carries the EAS signals sent out by federal and state authorities. Many public radio stations in Alaska depend upon our signal as part of their EAS compliance. We recently had the opportunity to work with a commercial station, KINY in Juneau to provide this service to them via satellite, and have been asked recently to do the same for another station in Valdez via the ARCS over-the-air signal there.

Alaska Public Broadcasting Digital Distribution Network

Project Summary: project objective is interconnection of public broadcasting system facilities by means of the internet or constructed intranet. Upon completion of the network, delivery of content - programming, data and voice - and access to advanced

networking options will be available to the system, enhancing service to local, regional and statewide audiences. The project is based on a network design developed under a previous federal grant from the US Department of Commerce. The project began in March 2004 and milestones include:

Review of network design and work scope: a thorough review of the original design and work scope was completed to determine if the selected equipment was still the best choice.

University of Alaska partnership agreement: entered into a multi year agreement with the UA statewide office of information technology for provision of connectivity between the hubs via the UA data backbone; and operational oversight of the network on a twenty-four hour basis once normalized operation begins. This oversight provides rapid reporting of problems so system maintenance and repair can be provided with minimal down time for network users.

Equipment bids, purchase and deployment: the core equipment for the hub and control locations was installed in August, 2005. Since then, data network equipment for 26 stations has been installed. Competitive bidding has yielded average discount of 31% saving \$465,000.

The overall project is on schedule and within budget. There continues to be local technical issues to resolve but we have made good progress and we have not encountered any serious unanticipated problems or set backs requiring significant changes to the work scope.

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All sites have been installed and project efforts remain focused on operations and maintenance. The network is moving on adoption of VoIP technologies, the development of VPNs and remote SNMP monitoring. The effort to coordinate and integrate the various sites on the network is ongoing and additional code updates focused on new software for routing and switching systems.

This project work scope component is essentially complete. There will be a couple of follow-up trips to sites but current activity is primarily the occasional technical assistance being provided to personnel at various sites.